IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

BIG WILL ENTERPRISES INC. Plaintiff, v. LOOMIS ARMORED US, LLC Defendant.	Civil Action File No.: 1:25-cv-01063 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Big Will Enterprises Inc. ("BWE" or the "Plaintiff") in British Columbia, by and through their undersigned attorneys, files this original Complaint against Loomis Armored US, LLC ("Loomis" or "Defendant") and alleges, based on its own knowledge with respect to itself and its own actions and based on information and belief as to all other matters, as follows:

INTRODUCTION

1.

This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code to enjoin infringement and obtain damages from Defendant's unauthorized manufacture, use, sale, offer to sell, and/or importation into the United States for the subsequent use or sale of products or methods that infringe one or more claims of United States Patents: 10,521,846; 9,049,558; 8,737,951; 8,559,914; and 8,452,273.

2.

BWE is an innovative company in the field of sensor technology for determining human activities for health, safety and other uses. BWE's sensor-based technologies go beyond

determining simple human locations and offer smartphone users (and other communication-based devices) a personal surveillance system based on their activities. The technologies monitor sensors such as the accelerometer, the gyroscope and others for uniquely identifying human activities; the motion activities can include, for example, but not limited to, standing/stationary, walking, running, driving, skiing, sleeping, snoring, hiking, skateboarding, sky diving, bicycling, unicycling, golfing, falling down, swimming, riding a ski lift, a motor vehicle, a motorcycle, an airplane, a train, or a water vessel, accelerating or decelerating in a motor vehicle, motorcycle, train, airplane, or water vessel, vibrating, propagating through a medium, rotating, riding in a wheelchair, and other human movements, where capturing data and/or providing feedback is desired. BWE has created proprietary technologies in this field of technology since at least 2007 for, among other benefits, the increased health, safety, and wellbeing of its users. BWE's patented technology was developed for use on a wide variety of devices, including smartphones, smartwatches, and other communication and sensor-based devices in use on many popular products in the market today. In addition to licensing, BWE has incorporated its patented technology in its own test platforms for determining human activities, motions within activities, accidents and falls, among others.

3.

A primary inventive concept is method by which a particular human movement can be identified, when the sensors, in this case, those in a mobile phone, have no fixed orientation with respect to the human. A smart phone may be ina user's pocket, purse or backpack, for example and in no particular orientation. U.S. 8,452,273 cols. 1-3. Prior to the '273 Patent, there was no effective answer for this problem. BWE's sensor monitoring, processing and communication

technology is covered by the claims of the ’846, ’558, ’951, ’914, and the ’273 Patents asserted in this action, as well as other BWE patents.

JURISDICTION AND VENUE

4.

BWE is a British Columbia company, incorporated in Canada having its principal place of business at 4573 West 1st Avenue, Vancouver, British Columbia V6R 1H7, Canada.

5.

Upon information and belief, Loomis Armored US, LLC is a limited liability company organized under the laws of Texas, having its headquarters at 2500 CityWest Boulevard, Suite 2300, Houston, Texas 77042. Loomis Armored US, LLC may be served this Complaint by service upon its registered agent C T Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas, 75201-3136.

6.

This is an action for infringement of a United States patent arising under 35 U.S.C. §§ 271, 281, and 284-285, among others. This Court has subject matter jurisdiction over all causes of action set forth herein pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

7.

Venue is proper in this judicial district and division pursuant to 28 U.S.C. §§1391(b) and (c) and 1400(b) in that, upon information and belief, Defendant operates office locations at 1400 Smith Road, Suite 2, Austin, Texas 78721 and 9555 Ball Street, San Antonio, Texas 78217. Defendant routinely does business within this district, Defendant has committed acts of infringement within this district, and Defendant continues to commit acts of infringement within this district.

8.

On information and belief, Defendant actively uses infringing telematics systems including Netradyne's Driver i D-430 video safety devices within in this State and District. Defendant also provides an online presence under the name loomis.us, which is available to customers and prospective customers within this State and District. As a result of Defendant's business activities in this State and District, on information and belief, Defendant has had continuous and systematic contacts with this State and District.

9.

Upon information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to Defendant's substantial business in this State and judicial district, including: (i) at least a portion of the infringements alleged herein; and/or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from services provided to individuals in Texas and in this district.

ALLEGATIONS COMMON TO ALL COUNTS

10.

Plaintiff ("BWE") owns all right, title, interest in, and has standing to sue for infringement the following patents: United States Patent No. 10,521,846 ("the '846 Patent"), entitled "Targeted advertisement selection for a wireless communication device (WCD)," issued on December 31, 2019; United States Patent No. 9,049,558 ("the '558 Patent"), entitled "Systems and methods for determining mobile thing motion activity (MTMA) using sensor data of wireless communication device (WCD) and initiating activity-based actions," issued on June 02, 2015; United States Patent No. 8,737,951 ("the '951 Patent"), entitled "Interactive personal surveillance and security (IPSS) systems and methods," issued on May 27, 2014; United States Patent No. 8,559,914 ("the '914

Patent") entitled "Interactive personal surveillance and security (IPSS) systems and methods," issued on October 15, 2013; and United States Patent No. 8,452,273 ("the '273 Patent"), entitled "Systems and methods for determining mobile thing motion activity (MTMA) using accelerometer of wireless communication device," issued May 28, 2013. Copies of the '846 Patent, the '558 Patent, the '951 Patent, the '914 Patent and the '273 Patent are attached as Exhibits 1-5.

11.

BWE is a global leader and innovator in the field of sensor technology for determining human activities for health, safety and other uses. These proprietary technologies and innovations were being developed since 2007 for the increased health, safety and wellbeing of its users. BWE patented technology was developed for use on a wide variety of devices, including smartphones and wearables and are in use on many popular products in the market today. In addition to licensing, BWE has incorporated its patented technology in its own test platforms for determining human activities, motions within activities, accidents and falls, among others.

12.

BWE's sensor based technologies go beyond determining human locations by uniquely identifying human activities for automatically monitoring and tracking movements, such as sleep, stationary, walking, running, cycling, falling down, rotating and other human movements where capturing data and/or providing feedback is desired.

13.

BWE's sensor monitoring, processing and communication technologies are covered by the claims of the '846 Patent, '558 Patent, the '951 Patent, the '914 Patent and the '273 Patents which are asserted in this action, as well as other BWE patents.

14.

Defendant Loomis offers secure and comprehensive solutions for the distribution, handling, storage, and recycling of cash and other valuables for banks, retailers, and more. With revenue in the billions, Loomis operates through more than 400 branches worldwide and employs around 22,000 people. In the United States, Defendant operates nearly 200 branch locations with 11,000 employees, and over 3,200 vehicles. Defendant has made significant investments in, and is actively utilizing, telematics systems including fleet management platforms, that are designed to enhance safety, improve efficiency, and reduce operational costs, while also performing driver behavior monitoring functions.

15.

In particular, Loomis deploys telematics-enabled dash camera systems, including infringing Netradyne Driveri models, that are designed to detect and assess high-risk driving behaviors. These systems utilize built-in three-axis accelerometers and, in some configurations, gyroscopes to collect real-time motion data. The camera's accelerometer and or gyroscope sensors capture multiple data streams simultaneously, with each data point precisely timestamped to reflect specific moments of vehicle movement. This architecture allows for the accurate identification and evaluation of behaviors such as hard braking, rapid acceleration, and sharp cornering, as ell as collisions. On information and belief, Defendant has installed at least 3000 Netradyne Driveri units

on its fleet in the United States, Canada, and Puerto Rico, and is using these infringing units within this State and District.

> Netradyne announced a partnership with Loomis, that will see the implementation of 3,000 units of Netradyne's Driver i D-430 video safety devices, to Loomis' fleet across the U.S., Canada, and Puerto Rico. The Driver i D-430 pairs the real-time processing with four onboard cameras allowing Loomis drivers to make quick and accurate decisions that improve safety and reduce accidents. It delivers clear, actionable insights with analysis of 100 percent of drive time, evaluating both good and bad driving behavior and providing a complete picture. This results in a fair system that rewards positive driving and prioritizes areas that need improvement, so managers immediately know where to focus coaching efforts while drivers have the power to correct and coach themselves in a gamified app. [https://www.mwsmag.com/loomis-partners-with-netradyne/.]

16.

Netradyne Driveri, employed by Defendant, is an AI-powered vision based IoT system, sold as a product to fleets. The device is installed in trucks/cars behind the rear-view mirror, and the power is supplied from the car battery through a Power cable. The device is capable to connect with the OBD II/J1939 of the vehicle to collect the engine data. This device is passive to the driver. When the truck is running, the device captures 360° videos where the outward facing camera is the primary recording and other 3 cameras are optionally configured as per the customer requirement. The recorded videos are processed using machine learning algorithms on the device together with the other sensory data and can detect any events related to driving behavior and driver behavior. When an event is detected, an alert together with the supporting processed data is uploaded to the cloud dashboard where the events and related data can be accessed by the fleet manager. The device has two buttons on the bottom side of the device, when pressed creates alerts which are user generated. Two indicator lights on driver facing side indicate the current operational state of device.

Processor & GPU Specifications

GPU	NVIDIA Pascal™ architecture with 256 NVIDIA CUDA cores
CPU	6Dual-core NVIDIA Denver 2 64-bit CPU & Quad-core ARM Cortex A57 MPCore
Video Encoding H.265	1080p @ 30 fps
Video format	MP4 with H.265
Sensors	IMU –Accelerometer + Gyro, Temperature, Ambient Light

17.

According to Defendant's 2024 newslatter:

> Netradyne, an industry-leading SaaS provider of artificial intelligence (AI) and edge computing and full-service video telematics provider focused on safety and driver coaching for commercial fleets, today announced its partnership with cash-in-transit (CIT) industry leader, Loomis, to improve the safety of its armored trucks. Loomis is commencing the implementation of its fleets, which spans across the U.S., Canada, and Puerto Rico, with 3000 units of Netradyne's Driver•i D-430 video safety devices. The D-430, equipped with quad cameras, will offer the company increased visibility to ensure the safety of its vehicles as well as the drivers. Netradyne's next-level performance with unparalleled, high-definition visibility from one device served as a key driver for the partnership and differentiator when considering fleet safety solutions.
>
> "Given the nature of our business, navigating risk is paramount to our customers and the drivers of our trucks," said Randy Sheltra, EVP of risk management at Loomis.
>
> "A huge part of mitigating risk is enforcing physical and legal safety. Netradyne's Driver•i D-430 device will not only exonerate my drivers should accidents on the road occur but allow my team to accurately recognize and reward superior driving performance or address risky driving behavior before it becomes an unsafe event. Loomis is excited to join the forefront of AI-led fleet safety alongside Netradyne, strengthening both our drivers and customers' confidence in our ability to securely and efficiently transport cash."
>
> The Driver•i D-430 pairs the fastest, real-time processing on the market with four sophisticated onboard cameras allowing Loomis drivers to make quick and accurate decisions that improve safety and reduce accidents. It delivers clear, actionable insights with analysis of 100% of drive time, evaluating both good and bad driving behavior and providing a complete picture. This results in a uniquely fair system that rewards positive driving and prioritizes areas that need improvement, so managers immediately know where to focus coaching efforts while drivers have the power to correct and coach themselves in an engaging, gamified app.
> [https://www.loomis.us/resources/press-releases-news/loomis-selects-netradyne-improve-fleet-safety-armored-trucks.]

COUNT I

DIRECT INFRINGEMENT OF THE '846 PATENT

18.

Plaintiff incorporates by reference the allegations of Paragraphs 1-17.

19.

Defendant has directly infringed and continues to directly infringe at least one or more claims of the ’846 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant’s applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

20.

Independent Claim 1 of the ’846 Patent, shown in italics, recites:

> *1. A method for use in connection with a wireless communication device (WCD) transported by a mobile thing (MT), the WCD having a computer architecture that has access to a memory, comprising: determining a mobile thing motion activity (MTMA) associated with the MT that is transporting the WCD based at least in part upon sensor data, the sensor data derived from one or more sensors associated with the WCD,*

The Loomis telematics-equipped cameras function as wireless communication-enabled mobile computing devices, such as in-cab systems, that are installed within fleet vehicles. These devices incorporate integrated memory and processing components, enabling them to operate as onboard computing platforms during vehicle transport. Equipped with embedded accelerometer sensors, the cameras support the detection of motion-based driver behaviors and facilitate real-time data transmission for further analysis and fleet management purposes.

> *the one or more sensors measuring physical movement of the WCD in three dimensional space and producing data sets comprising three movement values and a time value, each of the three movement values indicative of physical movement of the WCD relative to a respective axis in a three dimensional (3D) coordinate system at the time value in order to permit statistical analysis of the physical movement;*

The Loomis telematics-equipped cameras used to determine driver behaviors are equipped with motion sensors—primarily three-axis accelerometers and, in some configurations, gyroscopes—that measure the physical movement of the wireless communication device in real time across

three spatial dimensions. These sensors generate time-stamped data sets, with each data point representing acceleration values along the *x*, *y*, and *z* axes at a specific moment in time. This framework enables the system to track movement within a three-dimensional coordinate space and perform statistical analysis of the data, including assessments of motion intensity, directional changes, and timing. The resulting sensor data is used to identify driver behaviors such as hard braking, rapid acceleration, and impact-related events by analyzing the distinct motion signatures present in the time-indexed data.

> *selecting an advertisement based at least in part upon the determined MTMA; causing the advertisement to be communicated to the WCD; and*

The Loomis telematics system is engineered to enhance driver safety and proficiency by continuously monitoring motion activities through accelerometer-based behavior analysis. When specific driving patterns—such as harsh braking, sharp turning, or consistent safe driving—are detected, the system may initiate targeted messaging or driver-focused content. These communications, including real-time alerts, performance feedback, or promotional messages, are delivered directly to the in-cab wireless communication device. The content selection and delivery are based, at least in part, on the detected motion behavior, enabling personalized interventions and incentive-driven feedback aligned with the driver's performance.

> *wherein the determining the MTMA comprises: storing a plurality of reference MTMA signatures in the memory, each of the MTMA signatures including frequency and/or time information associated with sensor data pertaining to a specific MTMA;*

The Loomis telematics system maintains a library of reference motion signatures in memory, each representing a distinct type of driving behavior. These signatures consist of characteristic accelerometer data—captured in both time and frequency domains—that correspond to activities such as hard braking and rapid acceleration. During operation, live sensor inputs are continuously compared against these stored patterns to identify matches with known behavior profiles. Accurate

classification relies on properly normalized accelerometer data, including compensation for gravitational acceleration across the *x*, *y*, and *z* axes. In addition, gravity-based orientation is used to establish the vertical (*z*) and horizontal (*x* and *y*) reference axes within the 3D coordinate system, enabling the system to conduct precise frequency and time-domain analysis for both vertical and horizontal motion components.

> *determining a normalizing mathematical relationship so that different data sets separated in time can be analyzed in the 3D coordinate system; using the normalizing mathematical relationship, determining normalized data sets; analyzing the normalized data sets in the frequency and time domains;*

The Loomis telematics system processes raw accelerometer data that includes gravitational acceleration, which must be mathematically normalized to ensure reliable motion interpretation. This normalization procedure eliminates gravitational bias and aligns motion data within a stable three-dimensional (3D) coordinate framework over time. Gravity is commonly used to determine the device's vertical orientation (*z*-axis), which in turn facilitates the accurate alignment of the horizontal plane (*x* and *y* axes). Once this spatial relationship is defined, live motion data sets are transformed into standardized coordinate-aligned values. These normalized data sets are then evaluated across both time and frequency domains—measuring parameters such as event duration, rate of change, and oscillation intensity—to enable high-precision detection and classification of driver behaviors over defined intervals.

> *determining likelihoods associated with the stored MTMA signatures based at least in part upon the analyzing; and selecting a most likely MTMA signature from the plurality of MTMA signatures based at least in part upon the likelihoods.*

The Loomis telematics system compares normalized accelerometer data against a stored library of motion activity signatures to determine driver behavior. This analysis evaluates both time-domain and frequency-domain characteristics of the incoming data and assesses the degree of correlation with each reference signature. Using predefined thresholds and correlation scoring metrics, the

system assigns likelihood values to candidate matches. The behavior classification associated with the highest correlation score is selected as the most accurate representation of the detected event. This statistically ranked comparison method enables precise and efficient identification of driver actions, supporting consistent behavior classification across varying operational contexts.

21.

Claim 2 of the '846 Patent, for example, recites:

> *2. The method of claim 1, wherein the advertisement is communicated to the WCD via an email or text message.*

Loomis' servers and systems monitor driver behavior and uses advertisement notifications and/or reward messages so participants are automatically enrolled to receive in app messages, text messages and or summary emails.

22.

Claim 3 of the '846 Patent, for example, recites:

> *3. The method of claim 1, further comprising determining an identification (ID) of the MT and wherein the selecting the advertisement is further based at least in part upon the determined ID in addition to the determined MTMA.*

Loomis' centralized servers continuously monitor driver behavior data and are configured to deliver targeted advertisements or notifications based on driver performance metrics—such as driving scores, earned points, or standings. This system enables dynamic content delivery, allowing the platform to send personalized messages directly to the in-cab application based on real-time updates and promotional criteria tied to driver behavior analytics.

23.

Claim 4 of the '846 Patent, for example, recites:

> *4. The method of claim 1, further comprising determining a location of the WCD and wherein the selecting the advertisement is further based at least in part upon the location in addition to the determined MTMA.*

Loomis' backend servers and telematics systems monitor driver behavior in real time, including the geographic location where specific driving violations occur, as well as the start and end points of each route. The system generates notifications and visual updates that display violation locations, route summaries, and updated driver scores. These updates are simultaneously transmitted to the application interface used by the driver and recorded within the centralized server infrastructure for analysis, reporting, and fleet-wide performance tracking.

24.

Claim 5 of the '846 Patent, for example, recites:

> *5. The method of claim 1, further comprising receiving a payment for or otherwise monetarily benefiting from causing the advertisement to be communicated.*

Loomis' servers and telematics systems actively monitor driver behavior and promote improved driving performance by assigning scores and recognizing high-ranking drivers. The platform supports behavior-based incentives and awards, encouraging safer driving habits across the fleet through performance tracking, ranking visibility, and recognition programs.

25.

Claim 6 of the '846 Patent, for example, recites:

> *6. The method of claim 1, wherein the causing comprises enabling an advertiser to communicate the advertisement to the WCD by advising a remote computer system associated with the advertiser of the MTMA.*

Loomis' servers and systems monitor driver behavior and utilize detected risky behaviors to trigger the delivery of predefined advertisements or messages from a remote computing platform. These advertisements may be dynamically reconfigured over time based on updated safety criteria, behavioral trends, or campaign objectives, enabling targeted driver engagement and safety reinforcement.

26.

Claim 7 of the '846 Patent, for example, recites:

> *7. The method of claim 1, further comprising enabling a user of the WCD to enable and disable the causing of the advertisement.*

Loomis' systems provide users with the option to receive notifications and messages via mobile phone and email. Users may also choose to disable or opt out of these communications through configurable settings, ensuring flexibility in how they receive safety alerts, behavior updates, or system-generated messages.

27.

Claim 8 of the '846 Patent, for example, recites:

> *8. The method of claim 1, wherein the sensor data is derived from an accelerometer, a gyroscope, or both.*

Loomis' servers and systems monitor driver behavior by processing sensor data collected from onboard accelerometers and, in some configurations, gyroscopes. These motion sensors provide real-time inputs on vehicle dynamics, enabling the system to detect and evaluate driving behaviors such as hard braking, rapid acceleration, and directional changes.

28.

Claim 9 of the '846 Patent, for example, recites:

> *9. The method of claim 1, wherein the steps are performed in the WCD itself or in one or more communicatively coupled computer systems that are remote from the WCD and that receive the sensor data from the WCD.*

Loomis' servers and systems monitor driver behavior using internal motion sensors and complement this data with server-based analysis to enhance the accuracy of smartphone-derived information. For example, driver scores are calculated at least in part using sensor data from the smartphone, which is processed to detect violations such as unsafe driving, hard braking, and unnecessary acceleration.

29.

Claim 10 of the ’846 Patent, for example, recites:

> *10. The method of claim 1, wherein the WCD is communicatively coupled to a remote computer system and wherein the memory is associated with the remote computer system.*

Loomis’ servers and systems monitor driver behavior using onboard sensor data while also leveraging remote server-side processing to make independent decisions that are not executed directly on the user’s device. This architecture allows critical behavior assessments and classifications—such as those related to unsafe driving patterns—to be made remotely, enhancing the accuracy and consistency of the system’s behavioral evaluations.

30.

Independent Claim 12 of the ’846 Patent, shown in italics, recites:

> *12. A wireless communication device (WCD) transported by a mobile thing (MT), comprising: one or more transceivers designed to enable access to a remote computer system, the remote computer system designed to select a targeted advertisement and enable the advertisement to be communicated or accessed by the WCD;*

The Loomis telematics-equipped cameras for determining driver behaviors are wireless communication devices installed in fleet vehicles, featuring one or more transceivers for connecting with remote computer systems. These systems capture and analyze sensor-based motion data—specifically accelerometer readings along the *x*, *y*, and *z* axes—to precisely identify driver behaviors. The remote infrastructure processes this data to generate individualized behavior profiles and transmits targeted content, alerts, or driver-specific messages back to the in-cab device. Unlike conventional GPS-only tracking solutions, Loomis’ platform supports advanced detection of high-risk driving activities, such as harsh acceleration, sudden braking, and aggressive cornering, and uses these insights to deliver real-time performance feedback and behavior-based communications.

> *one or more sensors associated with the WCD designed to produce sensor data, the sensor data indicative of physical movement of the WCD in three dimensional space and including data sets comprising three movement values and a time value, each of the three movement values indicative of physical movement of the WCD relative to a respective axis in a three dimensional (3D) coordinate system at the time value in order to permit statistical analysis of the physical movement;*

The Loomis tracking system monitors driver behavior through motion sensors—including three-axis accelerometers and, in certain configurations, three-axis gyroscopes—embedded within the wireless communication device (WCD) installed in each vehicle. These sensors capture real-time data across three dimensions (*x*, y, and *z*), reflecting acceleration and orientation changes that correlate with specific driver actions such as hard braking, rapid acceleration, and directional turning. Each motion data sample is time-stamped, allowing for statistical analysis across defined intervals. This framework enables the system to assess the intensity, trajectory, and duration of vehicle movement, providing the foundation for accurate identification and classification of driver behaviors.

> *one or more memories designed to store computer program code; and one or more processors designed to execute the computer program code, the computer program code comprising: code designed to determine mobile thing motion activity (MTMA) of the MT that is transporting the WCD based at least in part upon the sensor data and the statistical analysis of the physical movement of the WCD;*

The Loomis telematics-equipped cameras and systems feature onboard memory for storing software code and processors configured to execute that code in real time. The embedded application analyzes sensor inputs—primarily from accelerometers and gyroscopes—collected during vehicle operation. By applying statistical techniques to time-based motion data, the system identifies specific motion activities, such as standard driving, harsh braking, and aggressive acceleration. This classification of Mobile Thing Motion Activity (MTMA) is derived at least in

part from the processed sensor data and its temporal patterns, enabling precise behavioral profiling while the vehicle is in motion.

> *code designed to communicate the sensor data or a mobile thing motion activity (MTMA) of the MT that is transporting the WCD and that is derived from the sensor data via the one or more transceivers to the remote computer system in order to enable selection of the targeted advertisement that is suited for the determined MTMA; code designed to receive and locally communicate the advertisement to a user interface of the WCD; and*

The Loomis telematics system is engineered to enhance driver safety and performance by conducting real-time monitoring of motion activities through accelerometer-based behavior analysis. Upon detecting specific driving patterns—such as harsh braking, abrupt cornering, or sustained safe driving—the system may initiate the delivery of targeted communications, including driver-specific messages and advertisements. These notifications are transmitted directly to the in-cab wireless communication device, with the objective of reinforcing safe driving habits and presenting relevant incentives or services tailored to the driver's behavior profile.

> *wherein the code designed to determine the MTMA comprises: code designed to store a plurality of reference MTMA signatures in the memory, each of the MTMA signatures including frequency and/or time information associated with sensor data pertaining to a specific MTMA; code designed to determine a normalizing mathematical relationship so that different data sets separated in time can be analyzed in the 3D coordinate system;*

The Loomis tracking system code normalizes the live data into sets of data that may be measured in the frequency and time domains and allows the live 3D (three or more axes from the accelerometer and/or gyroscope) data to be compared to the reference data. Code is used to determine time separations so the raw data so it may be analyzed in a 3D coordinate system.

> *code designed to, using the normalizing mathematical relationship, determine normalized data sets; code designed to analyze the normalized data sets in the frequency and time domains;*

The Loomis tracking system utilizes software that applies a normalization process to raw accelerometer and gyroscope data, effectively eliminating gravitational influence and aligning

sensor readings within a stable three-dimensional coordinate system. This normalization produces clean, time-stamped data sets that accurately reflect vehicle movement along the *x*, *y*, and *z* axes. Once normalized, the system analyzes these data sets across both the frequency domain—capturing motion intensity and repetition—and the time domain—assessing acceleration duration and abruptness. This combined analysis enables real-time motion events to be reliably compared against stored reference patterns, supporting precise identification of driver behaviors.

> *code designed to determine likelihoods associated with the stored MTMA signatures based at least in part upon the analyzing; and code designed to select a most likely MTMA signature from the plurality of MTMA signatures based at least in part upon the likelihoods.*

The Loomis tracking system incorporates software logic that processes normalized sensor data—derived from accelerometers and optionally gyroscopes—in both the time and frequency domains. This data is evaluated against a library of pre-established motion activity reference signatures, each representing a distinct driving behavior such as hard braking, aggressive acceleration, or smooth driving. The system computes correlation or likelihood scores based on how closely the real-time motion data aligns with each reference profile. It then selects the motion activity signature with the highest correlation, ensuring accurate, real-time classification of the driver's behavior.

31.

Claim 13 of the '846 Patent, for example, recites:

> *13. The WCD of claim 12, wherein the program code further comprises code to determine an identification (ID) associated with the MT and wherein the code to select the advertisement makes the selection based at least in part upon the determined ID of the user.*

Loomis' servers and systems monitor individual driver behaviors by analyzing data transmitted from in-vehicle telematics devices. Based on this data, the platform generates driver-specific scoring, performance feedback, and coaching insights. Each driver is linked to the system through

a unique smartphone identifier, which allows the remote server to transmit targeted notifications, behavioral updates, and performance messages directly to the driver's mobile device.

32.

Claim 14 of the '846 Patent, for example, recites:

> *14. The WCD of claim 12, wherein the program code further comprises code to determine a location of the WCD and wherein the code to select the advertisement makes the selection based at least in part upon the location.*

Loomis' servers and systems monitor driver behavior and determine the user's location through onboard telematics devices. The system is configured to deliver targeted advertisements or content to the user under specific conditions, including the detection of unsafe driving behaviors, the completion of a route, or the initiation of a new route. These communications are triggered by behavioral and locational events and are delivered directly to the user's in-cab interface or connected device.

33.

Claim 15 of the '846 Patent, for example, recites:

> *15. The WCD of claim 12, wherein the sensor data is derived from an accelerometer, a gyroscope, or both.*

Loomis' servers and systems determine driving events—such as rapid acceleration, hard braking, and other motion-related behaviors—by analyzing acceleration data collected from onboard sensors, including three-axis accelerometers and, in some configurations, gyroscopes. These sensors capture real-time changes in vehicle dynamics, which are then processed to identify and classify specific driving behaviors.

34.

Claim 16 of the '846 Patent, for example, recites:

> *16. The system of claim 12, wherein the computer program code further comprises: code to determine a mathematical relationship between different*

> *data sets to enable analysis of the different data sets in the 3D coordinate system; and code to determine the MTMA based at least in part upon the analysis of the different data sets in the 3D coordinate system.*

Loomis' servers and systems monitor driver behavior by calculating a mathematical relationship between reference *x*, *y*, and *z*-axis data and incoming accelerometer and/or gyroscope data within a three-dimensional coordinate system. To confirm the occurrence of a specific driving activity, the system requires multiple consistent data sets that match the expected motion pattern over a defined time interval before the behavior is classified and logged.

COUNT II

DIRECT INFRINGEMENT OF THE '558 PATENT

35.

Plaintiff incorporates by reference the allegations of Paragraphs 1-17.

36.

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '558 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

37.

Independent Claim 1 of the '558 Patent, shown in italics, recites:

> *1. A method, comprising: receiving a time value and at least three streams of data sample values from one or more sensors of a wireless communication device (WCD) that is transported by a mobile thing (MT), each data sample value indicative of movement of the WCD at a corresponding time value;*

Loomis deploys telematics-enabled dash camera systems designed to detect and assess high-risk driving behaviors. These systems utilize built-in three-axis accelerometers and, in some

configurations, gyroscopes to collect real-time motion data. The camera's accelerometer and or gyroscope sensors capture multiple data streams simultaneously, with each data point precisely timestamped to reflect specific moments of vehicle movement. This architecture allows for the accurate identification and evaluation of behaviors such as hard braking, rapid acceleration, and sharp cornering.

> *recognizing a particular set of data sample values as a reference for defining an orientation of the WCD in a coordinate system;*

To establish device orientation, Loomis' telematics-enabled dash cameras process accelerometer input to identify stable reference patterns—such as stationary intervals or consistent gravitational force readings—that define the sensor's alignment within a three-dimensional coordinate system. Because gravitational forces can skew sensor outputs during uphill, downhill, or uneven travel, Loomis' system applies compensation algorithms to filter out gravitational effects from the raw motion data. By correcting for these influences along the *x*, *y*, and *z* axes, the system isolates actual vehicle dynamics—such as true braking and acceleration—thereby enabling accurate motion classification and event detection.

> *computing reference data based upon the recognition of the particular set, the reference data defining a relationship between each set of subsequent non-reference data sample values and the particular reference set of data sample values in the coordinate system;*

Once device orientation is calibrated, Loomis' telematics-enabled dash cameras construct reference data structures that establish a baseline for evaluating all future sensor readings. These reference frames enable the system to detect deviations in motion and reliably interpret driver-induced activity—such as identifying when current acceleration values significantly diverge from stable gravitational patterns, which is essential to the event detection process. The reference framework is partially derived by determining whether gravitational acceleration (approximately 9.81 m/s²) is present in each data sample. By compensating for this gravitational effect, the system

effectively distinguishes true vehicle dynamics from gravity-induced variation, allowing for consistent and accurate classification of motion-based driving events.

> *calculating movement data in the coordinate system of one or more other non-reference data sample values based upon the reference data; and*

Loomis' telematics-enabled dash cameras continuously compute dynamic motion vectors by analyzing raw accelerometer data relative to the previously established orientation frame. This ongoing calculation enables the system to detect directional changes, abrupt movements, and sustained shifts in vehicle behavior within a stable three-dimensional coordinate system, ensuring precise motion tracking. By leveraging these motion vectors, the system can accurately interpret driver behavior in real time, facilitating the detection of high-risk driving events such as hard braking, rapid acceleration, and sharp directional changes.

> *determining a mobile thing motion activity (MTMA) associated with the MT based upon the movement data.*

Loomis' telematics-enabled dash cameras analyze motion data to categorize specific driving behaviors, including hard braking, rapid acceleration, and unsafe cornering. These classifications form the foundation for generating actionable insights, initiating driver alerts, supporting reporting workflows, and enabling targeted safety interventions. The system uses these categorized events to provide real-time feedback to drivers, reinforcing safe driving habits and contributing to broader fleet safety efforts.

38.

Claim 13 of the '558 Patent, for example, recites:

> *13. The method of claim 1, wherein one or more of the steps of the method is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Loomis' driver behavior monitoring platform operates using a hybrid architecture that combines local, in-vehicle processing with cloud-based analytical systems. Motion data is captured by

onboard sensors—specifically three-axis accelerometers—that record vehicle movement across the *x*, *y*, and *z* axes. This data is wirelessly transmitted and may consist of either raw acceleration inputs, used for downstream interpretation, or pre-processed behavioral classifications generated directly on the device through embedded motion analysis logic. Following transmission, Loomis' cloud-based infrastructure conducts further analysis, enabling real-time alerting, behavior assessment, and driver performance evaluation. This distributed processing model allows initial motion detection and classification to occur locally on the telematics-equipped device, while more complex computations and reporting functions are performed remotely. Moreover, Loomis' integrated telematics network facilitates seamless data exchange and centralized oversight across its operational platforms. This end-to-end connectivity enables consistent monitoring of high-risk behaviors—such as hard braking, rapid acceleration, and sharp cornering—while providing fleet managers with real-time insights to support safety initiatives and driver accountability.

39.

Claim 16 of the '558 Patent, for example, recites:

> *16. The system of claim 1, wherein the system is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Loomis' driver monitoring solution utilizes a hybrid architecture that integrates onboard processing with centralized, server-based computing to assess driver behavior throughout its fleet. Motion data is captured by embedded accelerometers within each vehicle, which measure acceleration along the *x*, *y*, and *z* axes. This data is transmitted wirelessly and may include either raw sensor readings—used to evaluate the severity of events such as hard braking and rapid acceleration—or motion classifications generated locally through embedded behavior-detection algorithms. Upon transmission, the data—regardless of its format—is further processed by Loomis' remote systems to support behavior analysis, generate detailed performance reports, and

deliver real-time alerts. The platform follows a distributed processing model; preliminary detection, such as motion event recognition, is handled locally on the in-vehicle telematics device, while more comprehensive computations—like behavior scoring and trend reporting—are executed remotely. This system architecture supports the end-to-end detection and evaluation of driver behaviors—including hard braking, rapid acceleration, and sharp cornering—enhancing Loomis' ability to monitor, assess, and manage fleet-wide driving performance at scale.

40.

Independent Claim 17 of the '558 Patent, shown in italics, recites:

> *17. A method, comprising: receiving first and second data from one or more sensors associated with a wireless communication device (WCD) transported by a mobile thing (MT), the first and second data indicative of movement of the WCD;*

Loomis' in-cab camera systems assess driver behavior using integrated technologies, including GPS and embedded three-axis accelerometers. These sensors capture real-time acceleration data across the x, y, and z axes, enabling the system to detect and analyze critical driving behaviors such as hard braking and rapid acceleration with precision.

> *determining reference data that defines a reference framework from the first data;*

Loomis' telematics-enabled in-cab camera systems determine driver behaviors by capturing detailed accelerometer data samples from onboard devices. These samples are compiled into structured data objects that include precise acceleration values, including the gravitational constant ($g \approx 9.81$ m/s²). Initial readings are used to quantify gravitational effects on the device, enabling the system to distinguish and exclude non-movement-related influences. By compensating for gravitational acceleration, the platform ensures that all subsequent motion analysis reflects true driver-initiated activity. This filtering process enables accurate identification of behaviors such as

hard braking, rapid acceleration, and directional changes—without distortion caused by vehicle orientation, slope, or incline.

> *normalizing the second data with the reference data so that the second data can be analyzed in the reference framework; and*

Loomis' telematics-equipped in-cab camera systems establish baseline reference data to account for and eliminate gravitational effects, ensuring accurate evaluation of driver behavior. This essential calibration step allows the system to isolate true vehicle motion by filtering out gravity-induced sensor noise that might otherwise compromise detection accuracy. By removing gravitational influence, the system concentrates exclusively on meaningful dynamic inputs—such as hard braking, rapid acceleration, and directional changes—delivering consistent and reliable behavior classifications that reflect actual driver activity. This method enhances motion analysis precision and strengthens the reliability of fleet-wide safety monitoring.

> *identifying a mobile thing motion activity (MTMA) associated with the MT based upon the normalized second data.*

Loomis' telematics-enabled in-cab cameras determine driver behaviors by comparing real-time accelerometer data against reference values that exclude gravitational acceleration ($g \approx 9.81$ m/s^2). By removing the influence of gravity, the system isolates genuine vehicle movement, enabling accurate detection of key behaviors such as hard braking and rapid acceleration. This gravity-compensated processing ensures that only true dynamic actions are evaluated, supporting precise classification of driving events and delivering consistent, reliable behavior reporting across the fleet.

41.

Claim 25 of the '558 Patent, for example, recites:

> *25. The method of claim 17, wherein one or more of the steps of the method is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Loomis' monitoring platform operates through a distributed architecture that combines onboard data processing with centralized server-based analytics to evaluate driver behavior. Motion data is captured by in-vehicle accelerometers measuring acceleration along the *x*, *y*, and *z* axes, then transmitted wirelessly. Depending on system configuration, the data may include either raw sensor outputs—used to assess behaviors such as hard braking and rapid acceleration—or preprocessed classifications generated locally using embedded motion detection algorithms. Once received, this data—whether raw or categorized—is further processed by Loomis' centralized systems to issue real-time alerts, calculate behavior scores, and compile performance reports. The platform utilizes a hybrid model, wherein core motion recognition and event classification occur at the vehicle level, while higher-order analytics like trend analysis and scorecard generation are handled remotely. Through this system, Loomis continuously captures and evaluates critical driver behaviors—including hard braking, rapid acceleration, and unsafe cornering—advancing its telematics-driven safety oversight and performance management capabilities.

42.

Independent Claim 27 of the '558 Patent, shown in italics, recites:

> *27. A method for implementation in a wireless communication device (WCD) that is designed to detect a plurality of mobile thing motion activities (MTMAs) associated with a mobile thing (MT), comprising:*

Loomis' telematics-equipped cameras are engineered to detect and categorize a range of motion-based activities associated with vehicle operation. These systems integrate wireless communication, GPS tracking, and motion-sensing components—most notably, three-axis accelerometers that record movement along the *x*, *y*, and *z* axes. This configuration supports real-time behavioral monitoring by capturing dynamic vehicle data, enabling the system to accurately identify key events such as hard braking, rapid acceleration, and unsafe cornering.

> *receiving a plurality of data sample values from one or more sensors of the WCD that is transported by the MT, the data sample values indicative of movement of the WCD;*

Loomis' telematics-equipped cameras capture a continuous stream of data sample values from integrated motion sensors, including three-axis accelerometers and gyroscopes. These values represent the movement of the monitored transport (MT) during operation. The sensors record and transmit time-stamped motion data in real time, reflecting fluctuations in acceleration, velocity, and directional changes. This sensor data enables precise monitoring of vehicle dynamics, supporting accurate assessment of driving behaviors and motion-related events as they occur.

> *computing reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of data sample values; calculating movement data based upon the reference data and the data sample values; and*

The telematics-equipped cameras deployed by Loomis analyze raw motion sensor input by applying internal reference frameworks to normalize the data. This normalization accounts for gravitational acceleration (e.g., $g \approx 9.81$ m/s²) and compensates for changes in the vehicle's orientation. By aligning real-time accelerometer outputs with these baseline references, the system derives accurate motion metrics that reflect true changes in vehicle dynamics—such as magnitude of movement and directional shifts. These normalized calculations provide the foundation for classifying driver behaviors, including harsh braking, rapid acceleration, and other forms of aggressive driving.

> *determining an MTMA associated with the MT based upon the movement data.*

Using movement data obtained from accelerometers and related motion sensors, Loomis' telematics-equipped cameras identify and classify distinct vehicular motion activities—such as harsh braking, rapid acceleration, sharp cornering, and potential impact events. These

classifications are used to support real-time driver feedback, generate safety alerts, enable coaching interventions, and inform backend risk assessment systems.

43.

Independent Claim 42 of the '558 Patent, shown in italics, recites:

> *42. A system, comprising: one or more memories designed to store computer program code; one or more processors designed to execute the computer program code; and wherein the computer program code comprises:*

Loomis' telematics-enabled camera systems feature onboard memory and processors that run software/firmware dedicated to monitoring driver behavior and analyzing motion data. These systems combine wireless connectivity, GPS tracking, and motion sensors—primarily three-axis accelerometers, and optionally gyroscopes—to measure vehicle dynamics across the *x*, *y*, and *z* axes. Their core function is to identify and evaluate specific driving behaviors, such as hard braking and rapid acceleration, using real-time data collected during vehicle operation.

> *code to receive first and second data from one or more sensors associated with a wireless communication device (WCD) transported by a mobile thing (MT), the first and second data indicative of movement of the WCD;*

Loomis' telematics-enabled camera systems acquire sensor data streams from embedded accelerometers and gyroscopes within the vehicle's wireless communication device (WCD). These systems collect time-stamped motion data across the *x*, *y*, and *z* axes. Initial data samples may include gravitational effects or represent the device's baseline orientation. Subsequent motion samples are then recorded and compared against this baseline to assess movement characteristics. Through this comparative analysis, the system detects and identifies behavioral patterns—such as harsh braking and rapid acceleration—within defined time intervals.

> *code to determine reference data that defines a reference framework from the first data;*

The telematics-equipped camera system software establishes a reference framework by processing an initial set of motion data to determine factors such as gravitational influence and device orientation. This reference data serves as a baseline for interpreting subsequent accelerometer and gyroscope readings . By defining orientation and compensating for gravitational forces, the system normalizes incoming motion data within a consistent coordinate system. This structured approach enables accurate behavioral analysis by comparing real-time motion activity against the established baseline.

> *code to normalize the second data with the reference data so that the second data can be analyzed in the reference framework; and*

The telematics-equipped camera system applies the previously established reference framework to normalize subsequent sets of motion data. This process ensures that new motion events are evaluated against a known baseline, allowing for precise detection of deviations in acceleration or directional movement that may indicate driver behaviors or safety-related events. By comparing the second data set—which reflects ongoing vehicle activity—against the calibrated reference data, the system isolates relevant motion patterns for accurate identification of behaviors such as hard braking, rapid acceleration, or sharp cornering.

> *code to identify a mobile thing motion activity (MTMA) associated with the MT based upon the normalized second data.*

After normalization, the telematics-equipped camera system executes classification logic to identify specific motion activities such as hard braking, rapid acceleration, sharp turns, or potential collisions. These assessments are made by evaluating normalized motion data against predefined event profiles stored within the system. Once a match is detected, the system may trigger driver alerts, update behavior scorecards, or log safety-related events. This functionality aligns with the claimed methods of identifying motion activities based on processed sensor data, supporting accurate, real-time classification of driver behaviors.

44.

Claim 50 of the ’558 Patent, for example, recites:

> *50. The system of claim 42, wherein the system is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Loomis’ telematics platform supports the continuous collection and interpretation of data associated with critical driver behaviors, including hard braking, rapid acceleration, and unsafe cornering—functionalities that reinforce the company’s comprehensive safety and behavior-monitoring infrastructure. The system operates through a hybrid architecture that integrates in-vehicle data processing with centralized, remote computing. Onboard three-axis accelerometers capture real-time motion data across the *x*, *y*, and *z* axes. This information is wirelessly transmitted and may include either raw motion data—used to assess the severity of dynamic driving events—or pre-classified behavioral outputs generated locally using embedded motion analysis routines. Upon receipt, the data—regardless of format—is further evaluated by Loomis’ centralized systems to trigger real-time notifications, compute behavior scores, and support detailed driver performance assessments. This distributed model enables initial motion detection and classification to be performed directly on the in-vehicle wireless device, while broader analysis and reporting functions are handled remotely.

45.

Independent Claim 52 of the ’558 Patent, shown in italics, recites:

> *52. A system for implementation in a wireless communication device (WCD) that is designed to detect a plurality of mobile thing motion activities (MTMAs) associated with a mobile thing (MT), comprising: one or more memories designed to store computer program code; one or more processors designed to execute the computer program code; and wherein the computer program code comprises:*

Loomis' telematics-equipped in-cab camera systems are deployed across its fleet to support real-time driver behavior monitoring. These intelligent units feature wireless communication capabilities, onboard memory, and processing components configured to execute motion analysis software during vehicle operation. The systems integrate cellular connectivity, GPS functionality, and three-axis accelerometers to capture movement across the *x*, *y*, and *z* axes. This sensor data forms the basis for identifying and evaluating key driver behaviors—such as hard braking and rapid acceleration—enabling accurate, real-time assessment of vehicle dynamics and operator performance.

> *code to receive a plurality of data sample values from one or more sensors of the WCD that is transported by the MT, the data sample values indicative of movement of the WCD;*

Loomis' telematics-equipped in-cab camera systems operate using embedded software code that continuously receives and processes data samples from integrated motion sensors. These data points—captured by three-axis accelerometers and, in some configurations, gyroscopes—reflect real-time changes in vehicle motion and orientation. Each sample is timestamped and serves as input to behavior detection algorithms, enabling the system to monitor dynamic movement and identify specific driver behaviors such as hard braking and rapid acceleration with precision and immediacy.

> *code to compute reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of data sample values;*

Loomis' telematics-equipped in-cab camera systems utilize reference data sets that represent baseline vehicle activity—such as periods of rest, steady-speed travel, or other stable motion conditions. This foundational reference framework enables the system to compare incoming sensor readings against known states, enhancing its ability to detect transitions between operational modes and refine event classification. By evaluating deviations from these baseline conditions,

the system accurately identifies and classifies dynamic driving behaviors such as hard braking and rapid acceleration.

> *code to calculate movement data based upon the reference data and the data sample values; and*

Movement data is derived by analyzing short-term motion activity in relation to a previously established reference framework. The system's code processes sequential sensor inputs to detect variations in velocity, direction, and force, allowing it to classify behaviors such as acceleration, braking, and directional changes over defined time intervals. This method enables precise tracking and evaluation of driver actions—including hard braking and rapid acceleration —by correlating real-time sensor data with normalized reference patterns.

> *code to determine an MTMA associated with the MT based upon the movement data.*

Using the calculated movement data, the in-cab system software determines whether specific mobile telematics motion activities (MTMAs)—such as hard braking and rapid acceleration—have occurred. When such events are detected, the system can flag corresponding video segments and trigger real-time alerts, integrate with driver coaching tools, and update backend reporting and performance scoring systems. This classification capability, based on real-time sensor input, enables consistent and effective monitoring of driver behavior across the fleet.

COUNT III

DIRECT INFRINGEMENT OF THE '951 PATENT

46.

Plaintiff incorporates by reference the allegations of Paragraphs 1-17.

47.

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '951 Patent, through, among other activities, using applications automatic programs

for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

48.

Independent Claim 1 of the '951 Patent, shown in italics, recites:

> *1. A wireless communications device (WCD), comprising: one or more memories that store computer program code; and one or more processors that execute the computer program code, the computer program code comprising:*

Loomis' telematics-equipped cameras, used for driver behavior analysis, operate as advanced wireless communication devices (WCDs) equipped with GPS, cellular connectivity, and integrated three-axis accelerometers for motion detection. Each system includes one or more memory modules containing program instructions and processors configured to execute that code. The onboard software interprets vehicle dynamics within a three-dimensional coordinate system by analyzing acceleration data along the *x*, *y*, and *z* axes. In certain configurations, the system also derives contextual insights from broader motion trends, enabling more accurate detection and classification of driving behaviors across diverse operational conditions.

> *instructions to enter a first mode of operation involving a first investigation process with one or more sensors, the first investigation process capturing first data with the one or more sensors;*

Loomis' telematics-equipped cameras utilize embedded logic to track vehicle movement and identify distinct operational states, including active driving and elevated-risk motion events. Upon activation, the system enters a monitoring mode that engages onboard accelerometers and, where applicable, gyroscopes to capture sensor data. This mode facilitates the detection of critical behaviors such as hard braking and rapid acceleration. Throughout this process, the system

collects continuous real-time inputs—including vehicle speed, geographic location, and motion intensity—to support reliable classification of driving events and accurate behavioral assessments.

> *instructions to determine whether or not the first data is indicative of an activity relating to a user need for assistance, an accident, or a crime; and*

Loomis' telematics-equipped cameras incorporate embedded logic that continuously evaluates incoming sensor data to detect irregular vehicle motion patterns. This includes analyzing changes in acceleration and directional movement to identify potentially unsafe conditions, such as abrupt deceleration or erratic behavior. When such patterns are detected, the system determines whether the activity constitutes a potential safety incident, emergency event, or high-risk driving behavior warranting further analysis or response.

> *instructions to, when the first data may involve the activity, enter into a second mode of operation involving a second investigation process that is different than the first investigation process and that involves the one or more sensors and/or one or more other sensors in order to capture second data that is further indicative of the activity.*

Upon detection of a safety-related event—such as hard braking or sudden directional changes—Loomis' telematics-equipped cameras transition into an elevated monitoring mode that intensifies data acquisition. During this advanced phase, the system collects more granular information through the use of existing and, where applicable, supplementary sensors. This includes high-frequency accelerometer sampling, enhanced GPS-based location tracking, and precise timing of event duration. The goal is to construct a detailed and time-synchronized profile of the incident, capturing relevant conditions immediately preceding, during, and following the event.

49.

Claim 8 of the '951 Patent, for example, recites:

> *8. The system of claim 1, wherein the computer program code further comprises: instructions to compare the first data and/or the second data with reference data; and instructions to detect an event in an environment associated with the WCD based upon the comparison.*

Loomis' telematics-equipped cameras used for determining driver behaviors improve detection accuracy by capturing multiple accelerometer samples within short, defined time windows. The system compares this real-time motion data against pre-established reference baselines that exclude gravitational forces and other nonbehavioral influences. By isolating true motion signals from environmental or background noise, the system reliably identifies specific driving behaviors—such as hard braking, rapid acceleration, and unsafe cornering—based on measurable deviations from the calibrated reference framework.

50.

Claim 9 of the '951 Patent, for example, recites:

> *9. The system of claim 8, wherein the comparison is in the time domain, frequency domain, or both.*

Loomis' telematics-equipped cameras for driver behavior analysis enhance motion detection precision by evaluating accelerometer data across both time and frequency domains. The system gathers high-resolution accelerometer samples at short intervals and applies filtering techniques to remove gravitational influence, producing clean motion data across the *x*, *y*, and *z* axes. This refined data is analyzed for behavioral indicators—including variations in amplitude, frequency, and duration—that align with known high-risk driving patterns. By combining time-domain analysis (e.g., event duration) with frequency-domain evaluation (e.g., pattern spikes or signal repetition), the system accurately detects and classifies events such as hard braking and rapid acceleration.

51.

Independent Claim 10 of the '951 Patent, shown in italics, recites:

> *10. A wireless communications device (WCD), comprising: one or more memories that store computer program code; and one or more processors that execute the computer program code, the computer program code comprising:*

The Loomis telematics-equipped cameras for determining driver behaviors operate through applications running on wireless communication-enabled computing devices, such as in-cab devices equipped with cellular connectivity, GPS, and three-axis accelerometers. These devices contain memory components that store the software code and processors that execute it in real time. The program code interprets motion and orientation using data from the *x*, *y*, and *z* axes of the accelerometer, enabling the system to recognize various driving activities and, in some cases, infer aspects of the vehicle's surroundings. This configuration allows for continuous, sensor-based monitoring of driver behavior during vehicle operation.

> *instructions to produce data from one or more sensors associated with the WCD; instructions to determine a human body physical activity (HBPA) associated with a WCD user based upon the data;*

Loomis' telematics-equipped cameras for determining driver behaviors utilize software routines designed to collect and analyze motion sensor data—primarily from integrated three-axis accelerometers embedded within wireless communication-enabled devices. This data is processed to identify physical movement patterns indicative of vehicle dynamics. Although such sensor-based frameworks were initially developed for human activity recognition, Loomis' system applies analogous analytical techniques to assess vehicular motion. By evaluating signal frequency, intensity, and directional vectors, the system reliably detects and classifies key driving behaviors, including hard braking, rapid acceleration, and sharp cornering.

> *instructions to select a mode of operation from a set of modes, based upon the determined HBPA, the set including different modes of operation involving initiation of different investigation processes that capture different types of data; and*

Loomis' telematics-equipped cameras for determining driver behaviors incorporate software logic that executes program instructions to select an operational mode from a predefined set of modes, contingent upon the detection of high-risk activity, such as hard braking or rapid acceleration.

Upon selection, each mode initiates a tailored investigation process designed to capture particular categories of sensor data—enabling the system to dynamically monitor, classify, and respond to varying levels of driver behavior severity in real time.

instructions to communicate the data to a remote computer system.

Loomis' telematics-equipped cameras for determining driver behaviors incorporate adaptive operational modes that respond to detected motion patterns indicative of high-risk activities. When behaviors such as hard braking, rapid acceleration, or sudden deceleration are identified, the system executes instructions to select an appropriate mode of operation from a predefined set. Each selected mode initiates a distinct investigation routine tailored to the nature and severity of the event, enabling the capture of targeted data types at variable levels of sensitivity, sampling rates, or sensor utilization. The resulting data—including accelerometer readings, positional data, speed metrics, and motion characteristics—is transmitted to Loomis' centralized computing infrastructure for logging, analysis, and application in event-based alerts, driver performance scoring, and comprehensive fleet safety evaluations.

COUNT IV

DIRECT INFRINGEMENT OF THE '914 PATENT

52.

Plaintiff incorporates by reference the allegations of Paragraphs 1-17.

53.

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '914 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

54.

Independent Claim 5 of the '914 Patent, shown in italics, recites:

> *5. A system comprising: at least one computing device; and at least one application executable in the at least one computing device, the application comprising:*

Loomis' tracking system features telematics-equipped cameras operating applications purpose-built to monitor vehicle motion and evaluate driver behavior. These devices utilize integrated three-axis accelerometers to measure movement along the *x*, *y*, and *z* axes within a defined 3D coordinate framework. This sensor configuration enables the system to detect and classify critical driving behaviors—including braking intensity, rapid acceleration, and abrupt directional changes—based on real-time motion analysis.

> *logic that determines a user activity and/or user surroundings;*

Loomis' telematics-equipped cameras use embedded logic to monitor driver behavior by analyzing motion data trends over time. The system detects recurring motion patterns, identifies frequency spikes, and flags deviations from normal driving profiles to determine behaviors such as hard braking, rapid acceleration, and irregular vehicle movement. This data-driven analysis provides real-time insight into driver performance and environmental influences, enabling accurate behavior assessments and enhancing fleet safety oversight.

> *logic that determines a surveillance mode that corresponds to the user activity and/or the user surroundings;*

Loomis' telematics-equipped cameras operate continuously in an active monitoring mode, dynamically adjusting to real-time driving conditions and behavior patterns. Upon detecting elevated-risk activities—such as hard braking or sudden directional changes—the system increases its sensitivity and sampling rate. It captures critical parameters including speed, vector direction,

and acceleration magnitude to construct a detailed, context-aware behavioral profile of the driver and vehicle.

logic that facilitates a user-defined response to the user activity and/or the user surroundings; and

Loomis' telematics-equipped cameras deliver real-time driver alerts through visual and/or audible indicators when events such as hard braking, rapid acceleration, or potential hazards are detected. Drivers are provided with on-screen controls that enable them to acknowledge, disable, or respond to these alerts directly via the in-cab camera interface or associated telematics display. In addition to reviewing flagged events or initiating manual recordings for additional context, drivers can use integrated messaging tools to communicate with fleet management. This interactive capability allows drivers to confirm incident awareness, provide immediate feedback, or escalate safety concerns—fostering a responsive and collaborative fleet safety environment.

logic that communicates surveillance information to at least one remotely located computer device.

Captured event data—including motion patterns, driving violations, and behavioral assessments—is transmitted to Loomis' centralized servers for advanced processing. These backend systems perform further analysis, maintain comprehensive activity logs, and integrate the data into Loomis' broader safety and compliance ecosystem. The resulting insights support the generation of performance reports, real-time notifications, and targeted driver coaching, while also aiding in regulatory compliance efforts across the fleet.

55.

Independent Claim 15 of the '914 Patent, shown in italics, recites:

15. A method comprising the steps of: determining, by a computing device, a user activity and/or user surroundings;

Loomis' telematics-equipped cameras, installed throughout its fleet vehicles and integrated with three-axis accelerometers, are engineered to detect and analyze vehicle motion in real time. By capturing acceleration data along the *x*, *y*, and *z* axes, the system accurately identifies critical driver behaviors such as hard braking and rapid acceleration. These sensor-driven insights provide valuable context into the surrounding operating conditions and contribute to a comprehensive understanding of driver performance and behavior.

> *determining, by the computing device, a surveillance mode that corresponds to the user activity and/or the user surroundings;*

Loomis' telematics-equipped cameras function in an adaptive monitoring mode, continuously responding to real-time vehicle conditions and sensor feedback. When a sudden deceleration or other risk-related motion is detected, the system escalates its monitoring sensitivity, flagging the event as high-risk and initiating enhanced data capture. During this elevated state, the system logs critical parameters such as vehicle speed, directional shifts, and acceleration intensity. Motion data is recorded and analyzed across the full duration of the incident—before, during, and after—providing a complete and context-rich view of the event for accurate assessment and response.

> *facilitating, by the computing device, a user-defined response to the user activity and/or the user surroundings; and*

Loomis' telematics-equipped cameras provide drivers with real-time notifications of detected events—such as hard braking, rapid acceleration, or sudden directional changes—through visual and/or audible alerts. Drivers can interact with on-screen options to acknowledge, customize, or disable these alerts as necessary. Notifications appear directly on the in-cab camera display and mobile interface, allowing drivers to review flagged events, save relevant data, or initiate manual recordings for additional context. In certain situations, drivers may also use integrated messaging tools to communicate directly with fleet managers. This interactive functionality enables real-time

feedback, acknowledgment of events, and escalation of issues, fostering a responsive and safety-focused operational environment.

> *communicating, by the computing device, surveillance information to at least one remotely located computer device.*

Captured event data—including motion classifications and raw sensor inputs—is transmitted to Loomis' backend systems for centralized analysis, logging, and integration into broader fleet performance evaluations. These remote computing platforms generate near real-time notifications for fleet managers, enabling prompt intervention, driver coaching, and incident verification. Additionally, the system supports safety scoring, report generation, and comprehensive risk management, functioning as the central hub for behavioral oversight and regulatory compliance across Loomis' fleet operations.

COUNT V

DIRECT INFRINGEMENT OF THE '273 PATENT

56.

Plaintiff incorporates by reference the allegations of Paragraphs 1-17.

57.

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '273 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

58.

Independent Claim 22 of the '273 Patent, shown in italics, recites:

> *22. A method, comprising: receiving a time value and three streams of data sample values from an accelerometer of a wireless communication device*

> *(WCD) that is transported by a mobile thing (MT), each data sample value indicative of an acceleration of the WCD along an axis of a three dimensional (3D) coordinate system at a corresponding time value;*

Loomis' telematics-equipped cameras function as part of an integrated motion tracking system that utilizes three-axis accelerometers to monitor and assess vehicle movement. These systems feature advanced onboard computing, enabling cellular communication, GPS-based location and speed tracking, and precise detection of acceleration within a three-dimensional spatial framework. The accelerometers play a critical role in determining device orientation and measuring gravitational influence along the *x*, *y*, and *z* axes. Paired with time-stamped motion data, the system can analyze vehicle dynamics with high accuracy—forming a reliable foundation for identifying key driver behaviors such as hard braking and rapid acceleration.

> *computing reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of 3D sets of data sample values;*

Loomis' telematics-equipped cameras utilize reference data frameworks to accurately assess driver behavior, drawing on inputs from three-axis accelerometers that monitor motion along the *x*, *y*, and *z* axes. This reference structure is specifically calibrated to isolate and exclude static forces—such as gravitational acceleration—that do not originate from actual vehicle movement. By filtering out these non-dynamic influences, the system ensures that only genuine motion activity is analyzed. This enables precise classification of behaviors over defined time intervals, including routine driving, hard braking, and rapid acceleration, allowing for reliable detection and validation of real-world driver behavior patterns.

> *calculating movement data for each set based upon the reference data; and*

Loomis' telematics-equipped cameras determine driver behaviors by processing movement data generated from raw accelerometer inputs, predefined behavior classifications, and real-time motion pattern detection. This live sensor input is analyzed against calibrated behavioral

thresholds—including time duration, peak intensity, value ranges, frequency, and statistical averages. By applying this multi-dimensional analysis, the system accurately identifies driving behaviors such as hard braking, rapid acceleration, and sharp cornering. The resulting motion classifications are used to generate reliable driver behavior assessments and deliver actionable feedback, reinforcing fleet safety protocols and enhancing overall performance.

> *determining a moving thing motion activity (MTMA) associated with the MT based upon the movement data.*

Loomis' telematics-equipped cameras detect driver behaviors by normalizing live accelerometer data against pre-established reference baselines across defined time intervals. This normalization filters out short-duration, non-representative sensor anomalies—such as sub-second spikes—ensuring that only sustained and meaningful motion deviations are analyzed. By comparing real-time sensor input to this calibrated reference framework, the system accurately identifies and classifies key driving behaviors, including hard braking and rapid acceleration. These classifications form a foundational element of Loomis' behavior monitoring architecture and directly support its broader fleet safety assessment initiatives.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for relief that the Court enter judgment in their favor and against the Defendant, granting the following relief:

That the Court enter judgment that one or more claims of the '846 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the '558 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the'951 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the ’914 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the ’273 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That Defendant be ordered to pay damages adequate to compensate Plaintiff for its acts of infringement, pursuant to 35 U.S.C. § 284;

That Plaintiff be awarded increased damages under 35 U.S.C. § 284 due to Defendant’s willful infringement of the ’846, ’558,’951, ’914, and ’273 Patents;

That the Court find that this case is exceptional and award Plaintiff reasonable attorneys’ fees pursuant to 35 U.S.C. § 285;

That Defendant, its officers, agents, employees, and those acting in privity with it, be preliminarily enjoined from further infringement, contributory infringement, and/or inducing infringement of the patent-in-suit, pursuant to 35 U.S.C. § 283;

That Defendant, its officers, agents, employees, and those acting in privity with it, be permanently enjoined from further infringement, contributory infringement, and/or inducing infringement of the patent-in-suit, pursuant to 35 U.S.C. § 283;

That Defendant be ordered to pay prejudgment and post-judgment interest;

That Defendant be ordered to pay all costs associated with this action; and

That Plaintiff be granted such other and additional relief as the Court deems just, equitable, and proper.

DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38(b), Plaintiffs demands a jury trial on all issues justiciable by a jury.

Respectfully Submitted,

Dated: July 7, 2025

/s/ Brett Thomas Cooke

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